REMARKS

Applicant has carefully reviewed the Office Action mailed July 16, 2007 and offers the following remarks to accompany the above amendments.

Applicant wishes to thank the Examiner for indicating that claims 1-3 and 20-24 are allowed.

The Patent Office states that the withdrawn claims 4-14, 17, 18, and 25-57 must be cancelled. Applicant respectfully disagrees. Claims 4-14 depend from claim 1, either directly or indirectly, and thus each of claims 4-14 contain each of the limitations of claim 1. Claim 1 is generic as to claims 4-14. As provided by 37 CFR § 1.141, Applicant is entitled to claims to additional species which depend from or otherwise require all the limitations of the allowable generic claims. Accordingly, since claim 1 is allowed and is generic to claims 4-14, and claims 4-14 are written in dependent form to depend from claim 1, then claims 4-14 are also allowable under 37 CFR § 1.141. Applicant therefore respectfully requests that claims 4-14 be reintroduced and be allowed based on their dependency on claim 1.

Likewise, claim 20 has been allowed. Claims 25-57 depend from claim 20, either directly or indirectly, and thus each of claims 25-57 contain each of the limitations of claim 20. Claim 20 is generic as to claims 25-57. As provided by 37 CFR § 1.141, Applicant is entitled to claims to additional species which depend from or otherwise require all the limitations of the allowable generic claims. Accordingly, since claim 20 is allowed and is generic to claims 25-57, and claims 25-57 are written in dependent form to depend from claim 20, then claims 25-57 are also allowable under 37 CFR § 1.141. Applicant therefore respectfully requests that claims 25-57 be reintroduced and be allowed based on their dependency on claim 20.

Accordingly, Applicant respectfully requests that claims 4-14 and 25-57, which were previously withdrawn, be returned to their status as originally filed, and that claims 4-14 and 25-57 be allowed due to their dependency on allowed claims.

Claims 15, 16, 19, and 58 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,559,984 to Lee et al. (hereinafter "Lee") in view of U.S. Patent No. 6,134,034 to Terahara (hereinafter "Terahara"). Applicant respectfully traverses.

To establish *prima facie* obviousness, the Patent Office must show where each and every element of the claim is taught or suggested in the combination of references. MPEP § 2143.03. An obviousness inquiry requires looking at a number of factors, including the background

knowledge possessed by a person having ordinary skill in the art, to determine whether there was an apparent reason to combine the elements of the prior art in the fashion claimed by the present invention. *KSR Int'l v. Teleflex, Inc.*, No. 04-1350, slip op. at 14 (U.S., Apr. 30, 2007). For the Patent Office to combine references in an obviousness rejection, the Patent Office must identify a reason why a person of ordinary skill in the art would have combined the references. *Id.* at 15. If the Patent Office cannot establish obviousness, the claims are allowable.

Claims 15 and 19 both require estimating the power of the individual switched optical signals and generating the control signals as a function of the power estimates. However, the generating of the control signals in these claims is as a function of the power estimates **and** a reference value. Claim 58 also recites "processing each tapped optical signal to **produce an estimate of the power of each optical carrier signal** contained in the respective WDM optical signal," and "adjusting the intensity of each optical carrier signal prior to recombination by the multiplexers **as a function of the power estimates**."

Lee and Terahara, individually and in combination, fail to teach or suggest the estimating of the power of the individual switched optical signals and generating control signals as a function of the power estimates. In addition, the feedback controller 538 of Lee does not produce an estimate of optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power, as required by the claims of the present invention. In Lee, the optical variable attenuator 535 receives control signals and varies attenuation of optical power. A 1x2 coupler splits the optical signal passing through the attenuator 535. The split optical signal is converted to an electrical signal and the feedback controller 538 receives the electrical signal and provides a control signal that controls the attenuator 535. The attenuator 535 is controlled in proportion to the split input optical signal and therefore the optical power fluctuation in the input optical signal is reduced (Lee, col. 5, lines 37-51). There is no mention of the feedback controller 538 or any other device in Lee producing an estimate of optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power. Therefore, the feedback controller 538 of Lee does not teach or suggest estimating the optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power.

Likewise, Terahara does not teach or suggest estimating the optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power. Terahara discloses an optical power detector/controller 36 connected to an output of a WDM 18 through a splitter 32 and to the optical variable attenuator (58-1, 58-2, 58-m) for equalizing the power of each of the plurality of wavelengths (ch-1, ch-2, . . . , ch-m) (Terahara, Figure 13). However, the optical power detector/controller 36 of Terahara does not produce an estimate of optical power of each individual switched optical signal and generate the intensity control signals as a function of the estimates of optical power, as claimed in the present invention.

Instead, the controller 36 of Terahara receives a result of monitoring by spectrum monitor 34 and produces control signals for all the channels so that the power relativity in the WDM signal light can be maintained as a constant at the output of the transmitting station. Together, the controller 36 and the spectrum monitor 34 determine the spectrum of the WDM signal light from a decoupled portion of the WDM signal light and control bias currents of laser diodes 14 to control the power levels of the individual signal lights of the WDM signal light. More specifically, the relative power levels of the individual signal lights with respect to each other can be controlled. However, there is no mention of the controller 36 or any other device in Terahara producing an estimate of optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power. Therefore, the controller 36 of Terahara does not teach or suggest producing an estimate of optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power. Therefore, neither Lee nor Terahara teach or suggest the claimed step of estimating the optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power. Thus, in combination, the two references do not teach or suggest the claim element. Since the combination does not teach the claim element, the combination does not establish obviousness. As such, claims 15, 19, and 58 are allowable.

In addition, the generating in claims 15 and 19 is a function of the power estimates **and** a reference value. The Patent Office has failed to make a *prima facie* case of obviousness as there has been no identification of anyplace in the prior art where the generation of control signals is a function of the power estimates **and** a reference value. Neither Lee nor Terehara mention

generating the control signals as a function of the power estimates **and** a reference value. Therefore, claims 15 and 19 are allowable for this separate reason.

Claim 58 also deserves special mention. Claim 58 recites a method of individually controlling the intensity of a plurality of optical carrier signals capable of being switched by a switching core and recombined into wavelength-division multiplexed (WDM) optical signals by a plurality of wavelength division multiplexers, comprising:

tapping a portion of each WDM optical signal after recombination by the multiplexers to produce a respective tapped optical signal;

processing each tapped optical signal to produce an estimate of the power of each optical carrier signal contained in the respective WDM optical signal; and

adjusting the intensity of each optical carrier signal prior to recombination by the multiplexers as a function of the power estimates.

Claim 58 recites steps similar to the power estimating and generating of control signals in claims 15 and 19 and therefore is allowable for the same reasons with respect to claims 15 and 19. However, as can be seen by looking at the claim language of claim 58, claim 58 also recites limitations that are different from those in claims 15 and 19. For example, claim 58 requires tapping a portion of each WDM optical signal after recombination by the multiplexers and then processing the tapped optical signal to produce an estimate of the power of each optical carrier signal contained in the respective WDM optical signal. The Patent Office has failed to point to any portion of Lee, Terahara, or other prior art, that teaches or suggests tapping a portion of each WDM optical signal after recombination, processing the tapped optical signal to produce an estimate of the power of each optical carrier signal contained in the respective WDM optical signal, and then adjusting the intensity of each optical carrier signal prior to recombination by the multiplexers **as a function of the power estimates**. As mentioned above, the controller 36 of Terahara, together with the spectrum monitor 34, determines the spectrum of the WDM signal light from a decoupled portion of the WDM signal light and controls bias currents of laser diodes 14 to control the power levels of the individual signal lights of the WDM signal light. Thus, Terahara does disclose that the relative power levels of the individual signal lights with respect to each other can be controlled. However, there is no mention of the controller 36 or any other device in Terahara producing an estimate of optical power of each optical carrier signal and adjusting the intensity of each optical carrier prior to recombination by the multiplexers **as a**

function of the estimates of optical power, as recited in claim 58. Therefore, the Patent Office has failed to prove a *prima facie* case of obviousness with respect to claim 58. Accordingly, claim 58 is allowable for this separate reason.

Claim 16 depends from claim 15, and contains all of the limitations of claim 15. Thus, claim 16 is patentable for at least the same reasons set forth above with respect to claim 15.

The present application is now in condition for allowance and such action is respectfully requested. The Examiner is encouraged to contact Applicant's representative regarding any remaining issues in an effort to expedite allowance and issuance of the present application.

Respectfully submitted,

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